IS 767 (1988): Method for determination of colour fastness of textile materials to water [TXD 5: Chemical Methods of Test]

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Indian Standard

METHOD FOR DETERMINATION OF COLOUR FASTNESS OF TEXTILE MATERIALS TO WATER

(First Revision)

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Indian Standard

METHOD FOR DETERMINATION OF COLOUR FASTNESS OF TEXTILE MATERIALS TO WATER

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 31 August 1988, after the draft finalized by the Chemical Methods of Test Sectional Committee had been approved by the Textile Division Council.

0.2 This standard was first published in 1956 and has been revised to align it with ISO 105/E-1978 Textiles — Tests for colour fastness EOI — Colour fastness to water, issued by the International Organization for Standardization (ISO) and also to incorporate changes in line with other standards on colour fastness tests.

0.3 Colour fastness of textile materials is of considerable importance to the consumer. The fastness depends not only upon the nature and depth of shade of the dyestuff used but also upon the nature of the fibre and the method of dyeing or printing employed; the same colouring matter, when used in dyeing or printing different fibres or when applied by different methods upon the same fibre, may give vastly different results. Formulation of standard methods of test for determining colour fastness of textile materials to different agencies, likely to effect change in colour is, therefore, necessary.

1. SCOPE

1.1 This standard prescribes a method for the determination of colour fastness of textile materials of all kinds and in all forms to immersion in water.

2. PRINCIPLE

2.1 A specimen of the textile in contact with adjacent fabrics is immersed in water, drained and placed between two plates under a specified pressure in the testing device. The specimen and the adjacent fabrics are dried separately. The change in colour of the specimen and the staining of adjacent fabrics are assessed with grey scales.

3. SAMPLING

3.1 Sample to determine conformity of a lot of coloured textile material to a specification shall be selected so as to be representative of the lot.

3.2 Sample drawn in compliance with the relevant material specification or as agreed to between the buyer and the seller to evaluate colour fastness of the material in the lot shall be representative of the lot.

4. APPARATUS

4.1 Testing Device — consisting of a frame of stainless steel into which a weight-piece of mass 5 kg and base 11·5×6 cm is closely fitted so that a pressure of 12·5 kPa can be applied on test specimens measuring 10×4 cm placed between glass or acrylic resin plates. If the weight-piece is removed during the test, the testing device shall be so constructed that the pressure of 12·5 kPa remains unchanged.

NOTE — Suitable testing devices are the hydrotest, the perspiration tester and the perspirometer. If the dimensions of the composite specimen differ from the size of 10×4 cm, such a weight-piece has to be used that a pressure of 12·5 kPa is applied to the specimen. Other devices may be used provided that the same results are obtained as with the apparatus described in 4.1.

4.2 Oven — maintained at 37 ± 2°C.

4.3 Two Adjacent Fabrics — each measuring 10×4 cm, one piece made of the same kind of fibre as that of the textile to be tested or that predominating in the case of blends, the second piece made of the fibre as indicated below, or in the case of blends, of the kind of fibre second in order of predominance, or as otherwise specified.

If the First Piece is	*Second Piece to be*
Cotton	Wool
Wool	Cotton
Silk	Cotton
Linen	Wool
Viscose	Wool
Acetate or triacetate	Viscose
Polyamide	Wool or cotton
Polyester	Wool or cotton
Acrylic	Wool or cotton

4.4 Grey Scales — For assessing change in colour and staining.

5. REAGENT

5.1 Distilled Water — *See* IS : 1070-1977*.

6. PREPARATION OF COMPOSITE SPECIMEN

6.1 If the textile to be tested is fabric, place a specimen 10×4 cm between the two adjacent fabrics (**4.3**) and sew along one of the shorter sides to form a composite specimen.

6.2 If the textiles to be tested is yarn, knit or weave it into fabric and treat it as in **6.1** or form a layer of parallel lengths of it between the two adjacent fabrics (**4.3**), the amount of yarn taken being approximately equal to half the combined mass of the adjacent fabrics (**4.3**). Sew along two opposite sides to hold the yarns in place and to form a composite specimen.

6.3 If the textile to be tested is loose fibre, comb and compress an amount approximately equal to half the combined mass of the adjacent fabrics (**4.3**) into a sheet 10×4 cm. Place the sheet between the two adjacent fabrics and sew along all four sides to hold the fibre in place, and to form a composite specimen.

*Specification for water for general laboratory use (*second revision*).

7. PROCEDURE

7.1 Thoroughly wet the composite specimen in distilled water at room temperature. Pour off the water and place the composite specimen between two glass or acrylic resin plates, measuring about 11·5×6·0 cm under a force of 50 N.

7.2 Place the apparatus containing the composite specimen in the oven for 4 h at 37 ± 2°C.

7.3 Open out the composite specimen and dry it by hanging it in air in shade at a temperature not exceeding 60°C with the three parts in contact only at the remaining line of stitching.

7.4 Assess the change in colour of the specimen and the staining of the adjacent fabrics with grey scales by the methods prescribed in IS : 768-1982* and IS : 769-1982†.

NOTE 1 — Treated test specimen and the pieces of adjacent fabrics should have cooled after drying and should have regained its normal moisture content before evalution.

NOTE 2 — In cases of doubt in the colour fastness rating as assessed by an observer, the assessment should be done by at least three observers and the overall average rating should be reported.

8. REPORT

8.1 Report the numerical rating for change in colour of test specimen and the numerical rating for staining of each kind of adjacent fabric used.

*Method for evaluating change in colour (*first revision*).

†Method for evaluating staining (*first revision*).

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